# Real Power Losses White Paper Summary

Below is a summary of the recommendations from the Real Power Losses Workgroup.

General Recommendation:
The Real Power Losses Whitepaper should be used to help guide development of TBL information systems related to losses.

Physical Settlement Alternative

1) Maintain current practice of delayed returns (168 hours later).
2) Allow returns to be from any POR and any loss provider. This is possible only via a new TBL Information System that would automatically assign returns to loss obligations via E-tags.
3) Customers should have the flexibility to choose between physical and financial settlement and more often than once every six months. TBL has tentatively indicated that it could probably accept the administrative burden associated with changes to physical loss providers every quarter.

Financial Settlement Alternative

1) All transmission schedules using TBL's system should have the option to settle losses on a financial basis. In the near-term, this may be accomplished through an inter-business line agreement between TBL and PBL, whereby PBL uses the FPS rate schedule and a negotiated price. TBL would collect payment and pass those revenues through to PBL.
2) Transmission customers should have the option to choose between financial and physical settlement frequently, unless this proves to be administratively infeasible.
3) Financial settlement would be done monthly.

# Real Power Losses Whitepaper

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The purpose of this paper is four-fold: (1) provide background regarding BPA's Transmission Business Line's (TBL) current practice on the return of losses; (2) provide context for this issue by describing how some other Transmission Providers in the region handle losses settlement and current Federal Energy Regulatory Commission (FERC) policy; (3) describe the issues raised by the Losses Workgroup regarding TBL's Business Practice as well as principles that the group adopted for the purpose of formulating an alternative practice; and, (4) describe the preferred outcome. We have attempted to address issues raised during the Business Forum discussions in the text.

This whitepaper has been reviewed by the workgroup dealing with Real Power Losses as well as the larger TBL Business Practice Forum that is engaged in reviewing this and other Business Practices.

(I) Background

TBL's practice (See Reservation and Scheduling Procedures Business Practice):

- TBL requires a Transmission Customer to have one party responsible for the delivery of losses for all transmission contracts between itself and the BPA TBL.
- TBL allows a Transmission Customer to change loss providers up to twice/year on a 60 days' notice.
- Real Power Losses are replaced in accordance with BPA TBL's OATT, Schedule 9 and the applicable Service Agreement.
- Losses are settled by physical return 168 hours later (seven days); one complete day of hourly schedules/contract (0000 – 2400 hours) are returned to the TBL Network where the loss provider interconnects with TBL's Network.
- Hourly loss obligations are truncated to whole MW-hour quantities with any remainder carried-over and added to the next hour's obligation.
- Losses provided by the PBL are delivered concurrently with power transactions.
- The RODS scheduling system stands in the way of introducing much if any flexibility to the losses settlement issue; at a minimum, this effort should be used to design flexibility into the information system modules currently being scoped.

(II) Context [S.Buckmier will share her Control Area survey results.]

How other Transmission Providers in the WECC handle losses settlement:

- Avista: physical return, 168 hours later, however, Avista Utilities does allow financial returns that reflect negotiated rates.
- BC Hydro: allows financial and physical (concurrent) returns.
- CAISO: supplier settles concurrently based upon a distribution multiplier that is applied to the settlement price for energy.
- Idaho: legacy contracts require physical returns (168-hours later; new contracts allow for either in-kind physical settlement (OASIS) or concurrent.
- PGE: physical return, 168 hours later; the customer may choose daily whether to purchase or schedule a return.
- Montana: concurrent, physical return for all transactions.
- WAPA: in process of changing current process.
- PacifiCorp: for short-term and nonfirm, allows financial and physical (72-hour delay) returns.
- PSE: allows for physical and financial settlement and customers can make their elections once/month.
- Sierra/Pacific: allows for physical return and customers can make elections once/year with three months' notice.

FERC perspective:

- The *pro forma* tariff does not prescribe any particular method for accounting for losses.
- Loss Compensation is regarded as being an Interconnected Operations Service (IOS), not an Ancillary Service, and so it can be provided on a voluntary basis. (Orders 888 and 888A; Ameren Energy Marketing Co., 95 FERC ¶ 61,448 (2001).
- FERC has allowed financial settlement of losses obligations, however, it has the authority to approve the valuation proposed by the Transmission Provider. (ER01-798-000 and 001; 002; 003)
- If a Transmission Provider allows financial settlement, it must also allow physical settlement. (ER01-798-000 and 001; 002; 003)
- FERC appears to prefer physical returns to be done concurrently when a customer schedules its transactions with the Transmission Provider. However, FERC has recently allowed delayed physical returns but only on an interim basis. (ER01-798-000 and 001; 002; 003)
- FERC has allowed transmission customers choice among settlement options, e.g., elections on an annual basis, every six months, more frequent, etc. (various orders)
- It appears that FERC prefers that losses not be bundled in open access tariff transportation rates. (Order 888, Promoting Wholesale Competition through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities, Order No. 888, [1991-6 Reg. Preambles] FERC Stats & Regs. ¶31,036, at 31,709 ((1996) (footnote omitted).

- FERC anticipated the potential for a losses market, which is consistent with the goal of fostering competition in energy markets. (Order 888, Promoting Wholesale Competition through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities, Order No. 888, [1991-6 Reg. Preambles] FERC Stats & Regs. ¶31,036, at 31,709 (1996)).
- FERC wants customer flexibility just as long as it is not detrimental to the system. (ER01-798-000 and 001)

(III) <u>Issues Associated with Current Business Practice</u>:

- Customers want to have more flexibility in terms of loss settlement, e.g,. physical and financial settlement.
- Customers want to be able to treat losses like any other Buy/Sell arrangement and thereby create a market for losses.
- Customers want current settlement options to remain in place even if additional flexibilities are introduced.
- Customers want to be allowed to change loss providers more frequently that currently allowed.
- Customers want the ability to return losses as a schedule which would allow aggregation of losses obligations and not being limited in terms of POR designations.
- Customers don't want to have to segregate loss returns by contract type, e.g., FPT, IR, PTP, NT, etc.
- Customers want reconciliation issues to be addressed in a more timely and effective reconciliation procedure as compared with the current practice.

<u>Workgroup Principles</u>:

- More flexibility in terms of the Business Practice.
- Identification of a cost-conscious solution for TBL and its customers.
- Ensure administrative ease for TBL and its customers.

(IV) <u>Potential Options</u>:

- Physical settlement
    - concurrent returns; and,
    - self-provision/third-party returns 168 hours later[1]
- Financial settlement

[1] The group assumed that delayed physical settlement would be on a 168-hour basis; alternative periods of delay were not discussed.

Background

TBL's historical practice has been to require customers (and their loss providers) to settle loss obligations by physical return, 168-hours later.  This practice is not described in TBL's tariff or rate schedule but in two of TBL's Business Practices, i.e., "Real Power Loss Return Methodology" and "Reservation and Scheduling Procedures", as well as in Transmission Service Agreements.  Therefore, although TBL's typical practice has involved physical settlement, it appears that nothing in its rate schedule or tariff precludes modifying this practice to allow financial settlement.  More specifically, it appears that a change in TBL's settlement practice would only require modifications to the above-mentioned Business Practices and Service Agreements.

In order to enable financial settlement of losses, TBL and PBL are exploring the possibility of using the FPS (Firm Power Products and Services) rate schedule as a vehicle to allow such.  The idea is that a Transmission Customer could contract with PBL as its Loss Provider by negotiating a rate under the FPS rate schedule.  The negotiated price for such service would be billed and collected by TBL and the revenues for such, would be passed through to PBL.

The idea of TBL setting up a losses market, e.g., developing its own portfolio of losses suppliers, was discussed by the workgroup but was dismissed by TBL due to its perception that such an activity would cause TBL to incur incremental risk  and the fact that such an effort is outside of TBL's current line of business activities.

The group discussed at great length opportunities for making physical settlement more flexible.  The RODS system is regarded as the root of the problem in terms of limiting flexibility that could be associated with physical losses settlement.  RODS will not allow mid-month changes in a loss provider; RODS requires loss returns to be contract-specific; RODS requires the POR of a transaction to be the POR of the losses return, etc.   Therefore, as long as RODS is in place, it appears that only minor changes can be made to the physical settlement process.

In conclusion, if the FPS option is acceptable to both business lines, it appears that financial settlement of losses is doable in the near-term. However, improved flexibility to the physical settlement option will not be doable until the "next generation" information system is developed and allows multiple loss providers settling obligations using a valid schedule from various Points of Receipt.

Below is a summary of the various elements discussed for both physical and financial settlement options:

- Physical return method – if different from current practice
  - Concurrent
    - By "parent" schedule, where losses are simultaneously delivered as a "child" schedule.
    - By aggregated obligation, where losses are delivered as an aggregated loss obligation for all schedules or transactions that occur during the same hour.
  - Delayed return
    - 168 hours
    - Other return periods, e.g., as defined by FERC.
  - Allowed flexibilities
    - No need to recognize contract type
    - Allow POR flexibilities
    - Allow more flexibility in terms of loss providers

- Financial Settlement
  - Valuation of losses (some form of pricing proxy)
    - Market hub prices
    - Cost of replacement energy
    - Other, e.g., PBL sells FPS product to settle loss obligation
  - Adjustment for time-differentiation
    - Seasonal
    - Time-of-day
- Election Options

- Physical Settlement Alternative

  a. Concept – this "option" plays off of TBL's current practice but introduces some additional flexibilities.

  b. Concurrent – one of the main issues that the workgroup associated with concurrent losses was the added reconciliation complication that would result from not knowing the exact obligation, e.g., knowing the rolling obligation that needs to be tracked and aggregated into 1 MW-hour quantities.

  c. Delayed Return – the group seemed comfortable with the current practice of delayed returns, i.e., 168 hours later. In fact, the group concluded that certainty of obligation (reconciled amount) out-weighed the price or value certainty that would be gained by concurrent return. The group's conversation did not have the benefit of FERC policy which appears to prefer concurrent returns and discourage delayed returns. Delayed returns could still allow for aggregation of loss obligations.

d. Return Obligation – the group identified an issue with physical returns that TBL currently deals with by "rolling up" obligations into 1 MW-hour quantities. The group discussed the possibility of requiring financial settlement for those total hourly schedules that are less than 53 MW (53 MW * 1.9% equals 1 MW.

e. Points of Receipt – the group was interested in allowing returns to be from any POR (any interchange point between a loss provider and BPA) and any loss provider, via a valid schedule (i.e., a schedule over a non-constrained path). The group recognized that this would only be possible with a new TBL Information System that would automatically assign returns to loss obligations (e.g. either individual contractual obligations or aggregated obligations) via E-tag.

f. Reconciliation – the group developed a due process procedure for the purpose of disciplining any necessary reconciliation. (**work-in-progress**).

g. Exercising Options – the group concluded that customers should have the ability to choose between physical and financial settlement and more often than once every six months. The TBL has tentatively indicated that it could probably accept the administrative burden associated with changes every quarter for physical losses; the frequency of changing between physical and financial options was not fully discussed.

h. TBL's Role – TBL would track hourly loss returns and reconcile such with hourly loss obligations, whether by specific schedule or an aggregation of all schedules during any specific hour. Monthly accounting of losses would be part of the monthly check out procedures.

   FERC policy doesn't appear to prohibit TBL from selling losses as an Interconnected Operations Service (IOS). TBL would have to contract with PBL or other suppliers, however, if it decided to offer this service.

i. PBL's Role – PBL could continue to be a supplier of losses at least for those customers for whom it acts as Transmission Contract Holder and potentially, for others choosing physical or even financial settlement.

j. Failure to Return – Any failure to return losses due to pro rata curtailment in real-time would need to be made up as soon as possible and no later than 168 hours from the time of the curtailment.

- Financial Settlement Alternative

a. Concept – This option would result in all transmission schedules using TBL's system having the option to settle losses on a financial basis. This means that losses would be valued by a negotiated or proxy price, e.g., an index such as the price paid for replacement energy or the Dow Jones nonfirm energy index associated with various markets, e.g., the Mid-C, COB, etc. and weighted by on- and off-peak. At the end of each month, a transmission customer would pay TBL the sum total of the hourly amount of the losses obligations multiplied by the applicable indexed price(s). Assuming current loss percentages, transactions over the Network would include an additional 1.9%; transactions involving the Utility Delivery Segments would include an additional 0.6% (for DSI Delivery Segments, as specified in the Service Agreement) and, for use of the Southern Intertie Segment would include an additional 3.0%.

b. Size – This option would be available for all transactions no matter how large or small.

c. Reconciliation – the group developed a due process procedure for the purpose of disciplining any necessary reconciliation **(work-in-progress).**

d. Exercising Options – the group concluded that the transmission customer could exercise its option between financial and physical settlement frequently, unless this proved to be administratively infeasible.

e. Aggregation of Schedules – The financial settlement would be done on a monthly basis; therefore, all hourly schedules for any given month multiplied by the applicable index value would be aggregated into one single payment for each monthly loss obligation. An index would be agreed-upon by TBL and its customers and would probably need to reviewed and revised on occasion.

f. TBL's Role – TBL would track loss returns and reconcile such with loss obligations. Monthly accounting of losses would be part of the monthly billing procedures. Issues regarding the accuracy of bills would be handled in accordance with the OATT and a due process procedure which would impose a deadline on reconciliation between TBL and its customers~~.~~

g. PBL's Role – PBL would continue to be a potential supplier of physical settlement for those customers choosing that option.

h. Failure to Return – Not Applicable.

(V) Conclusion:
TBL's current information system and Business Practices limit the flexibility that customers want for settling losses obligations, e.g., some want greater flexibilities in terms of physical returns and others want financial settlement.

It appears that TBL may be able to offer a financial settlement option, to the extent the PBL is willing and able to use the FPS rate schedule for that purpose. The implementation of a financial settlement option would, however, require changes to TBL's Business Practices and amendments to Service Agreements.

For the time being, additional flexibilities for physical returns cannot be accommodated due to the inflexibility inherent in RODS.  Nonetheless, customers are interested in making sure that the "next generation" information system will be designed in a manner to accommodate the desired flexibility which would allow tracking of obligations and returns through E-tags and therefore, returns from any POR and any loss provider via a valid schedule.

TBL has tentatively agreed to change its current Business Practice to allow customers to change their loss provider once per quarter, however, there has not been any substantive discussion about the frequency to allow a customer to change between financial and physical settlement.